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(54) **Wavelength division multiplex optical transmission system using optical amplification.**

(57) In a wavelength division optical transmission system incorporating optical amplifiers, an identifying pilot tone is modulated on to each multiplexed wavelength. Each system amplifier determines from the pilot tones the total number of wavelengths being transmitted and thereby provides a corresponding adjustment of the amplifier gain. This prevents overamplification when one or more wavelengths is missing from the multiplexed signal e.g. as the result of a transmitter fault.

FIG.1

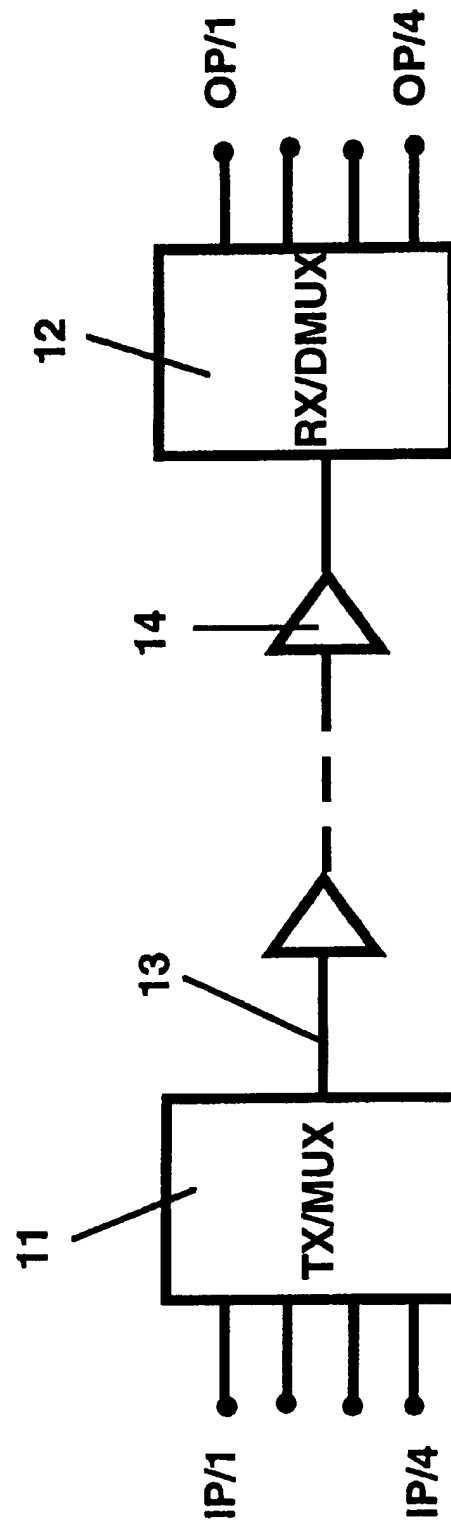


FIG.2

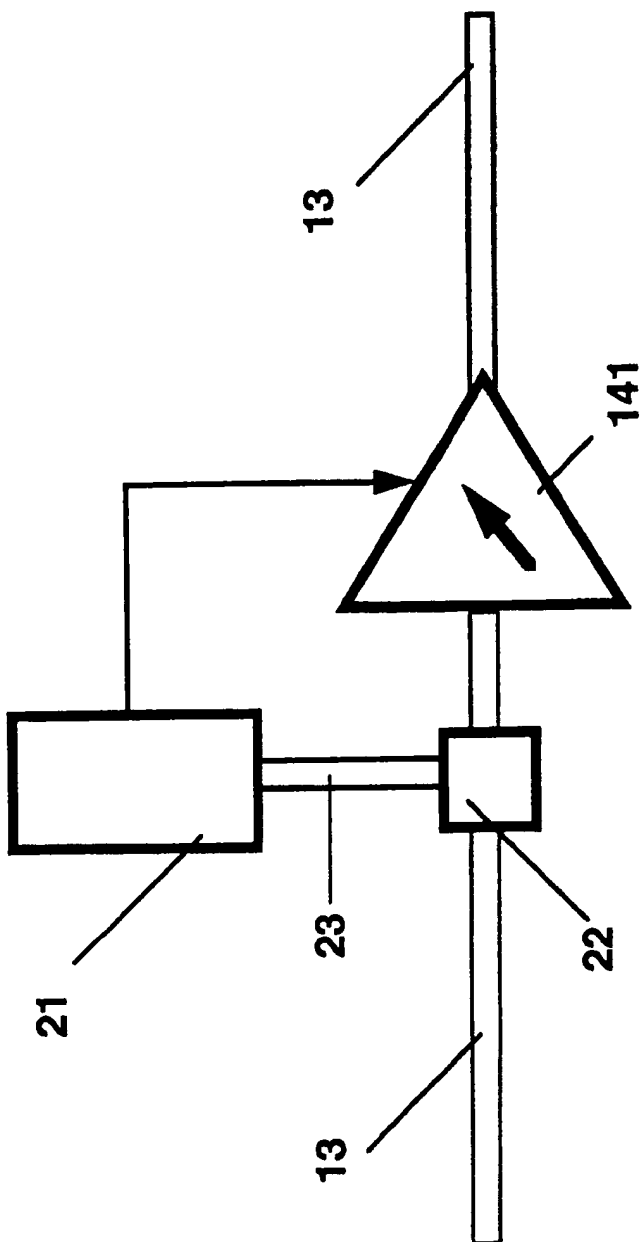
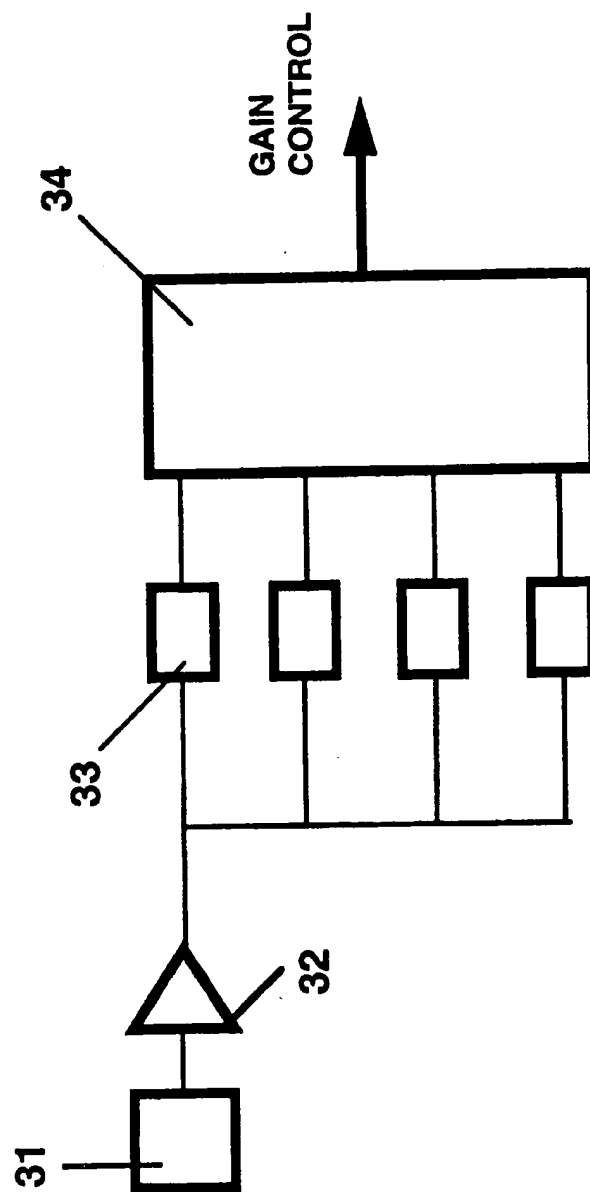


FIG.3





European Patent
Office

EUROPEAN SEARCH REPORT

Application Number

EP 94 30 5617

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int.Cl.6)
Y A	EP-A-0 467 396 (CANON KABUSHIKI KAISHA) * abstract; figure 5 * * column 3, line 20 - line 47 * ---	1,2,5 4	H04B10/17
Y A	GB-A-2 257 320 (FUJITSU) * page 2, line 6 - line 16; figures 2,3 * * page 6, line 11 - line 34 * ---	1,2,5 4	
A	EP-A-0 543 570 (ATT) * page 2, line 36 - line 46 * ---	1,4,5	
A	EP-A-0 242 802 (NEC) * column 3, line 4 - line 49; figure 1 * ---	1,4,5	
A	IEEE PHOTONICS TECHNOLOGY LETTERS, vol.5, no.2, February 1993, NEW YORK US pages 248 - 251 H.TOBA ET AL 'A 100-Channel Optical FDM Six-Stage In-Line Amplifier System Employing Tunable Gain Equalizers' * page 248, right column, last paragraph - page 249, left column, paragraph 1; figure 1 * -----	1,4,5	
The present search report has been drawn up for all claims			TECHNICAL FIELDS SEARCHED (Int.Cl.6)
			H04B H04J
Place of search THE HAGUE		Date of completion of the search 10 October 1994	Examiner Goudelis, M
<p>CATEGORY OF CITED DOCUMENTS</p> <p>X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document</p> <p>T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application I : document cited for other reasons & : member of the same patent family, corresponding document</p>			

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